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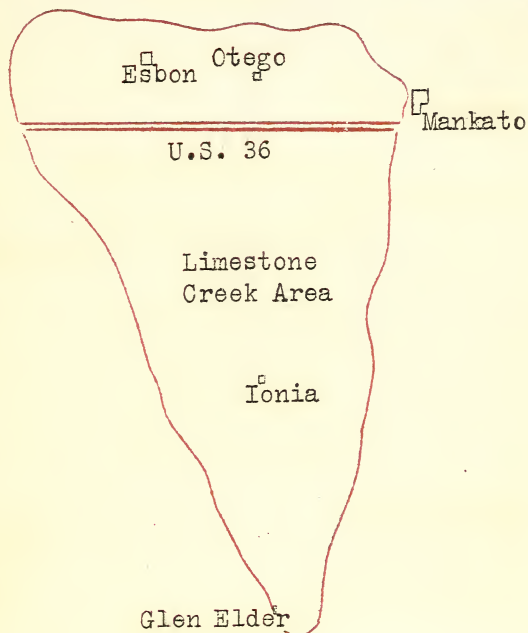
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KANSAS KONTOURS



U.S. DEPARTMENT OF AGRICULTURE
SOIL EROSION SERVICE
PROJECT NO. 11

Mankato, Kansas

May, 1935

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UNITED STATES DEPARTMENT OF AGRICULTURE SOIL EROSION SERVICE

Project No. 11

Mankato, Kansas.

Dr. F. L. Duley - Regional Director

Editor - E. T. Harden Contributors - SES Staff

MAY 1935

WORD FROM THE REGIONAL DIRECTOR

Up to the present time about four hundred farmers are actively cooperating with the Soil Erosion Service on this Project. Cropping plans have been agreed upon for each of these farms, most of the terracing has been done, fields are being divided on contour lines, and gully control work has been practically completed.

The Soil Erosion Service has, therefore, completed most of its part in the program. It is now time that many of the farms be checked to the farmer himself who will really begin in earnest the major part of the five-year cooperative plan.

We want each of our Cooperators to feel that their part in this program is as important as anything that has been done so far. It is only the beneficial effects that may be shown on the treated farms that will really prove the value of the whole program. It will take several years of earnest effort to bring out the full value of certain practices. Most of the grass, alfalfa and sweet clover seeding

as well as the tree planting is yet to be done. These erosion control crops are one of the most valuable parts of the plan, but continued dry weather has prevented planting.

Continued good farming on the land that has been treated in this work should make this Area the most outstanding and most popular farm Area in the state. Thousands of people are watching the results that are being obtained on this Area. People are coming here from all parts of the state and from other parts of the country to see how we farm land by these new methods. They are not so much interested now in what the Soil Erosion Service has done, but rather in how the Cooperators are able to make use of these methods in a complete system of erosion control which should greatly increase the value of every farm in the Area.

Any improvements which you may make in keeping fences or buildings in repair to give the farmsteads a more attractive appearance will leave a more favorable impression on the many visitors who come here and will also add to the value and attractiveness of the farm as a home.

We earnestly hope that each Cooperator will do his very best to make this the most outstanding water conservation and soil erosion control demonstration in the country.

AGRONOMY

GRAIN SORGHUMS VS. CORN

Few, if any, local farmers can remember a spring, with so little rainfall combined with practically no reserve soil moisture, as they are encountering this year. This very unusual condition, more than ever, raises the old question of whether to risk planting corn on the upland or play a much safer game and plant grain sorghums.

During average years it is considered a good farm management practice to divide the chances and use both corn and grain sorghum. Certainly if such a plan is good management under average conditions, 1935 ought to be a year when grain sorghum should occupy a large proportion of the row crop upland. The points that should decide the case are about as follows:

1. Corn planting time is at hand and the ground is bone dry. Western Blackhull can be planted two to three weeks later which gives ample time to kill a crop or two of weeds and a chance for rains to bring enough moisture to germinate the seed.

2. Moisture requirements of a corn crop are greatest during late July and August when rainfall is low.

Kafir forms grain later than corn, hence its maximum moisture requirements are late enough to utilize rains falling in August and September. This characteristic could easily be the deciding factor between the success of grain sorghum and the failure of corn this year.

Your County Agent can direct you to a reliable source of seed. Western Blackhull Kafir is the recommended upland variety for this section.

CRESTED WHEAT GRASS

Crested Wheatgrass, native of Siberia, is one of the most winter hardy and drought resistant of all cultivated grasses. This long-lived perennial bunch grass has seldom been known to suffer from frost injury during the severe winters of western Canada and the Northern Great Plains where it is grown extensively. Likewise, it has seldom suffered from drought even under conditions of rainfall as low as ten inches.

This grass is outstanding in its ability

to make a rapid, early growth during the spring season and to produce a good yield of forage before the parching summer season. During the hot, dry days it remains dormant, then resumes growth as soon as conditions are favorable in the fall.

When properly seeded on abandoned land, Crested Wheatgrass takes possession almost to the complete exclusion of weeds. A well developed, extensive root system makes it a strong competitor of weeds. Its good root system also enables it to withstand close grazing and severe trampling.

Compared to other grass, Crested Wheatgrass is very nutritious and palatable for all classes of livestock. Under conditions similar to its native dry-land habitat, yields of cured Crested Wheatgrass hay easily surpass the yields from other dry land grasses. -- From the "Northwestern," Pullman, Washington.

In the Limestone Area, Crested Wheatgrass is used along with Brome grass and Sweet Clover for tame pasture seeding, also for seeding interception ditches, spillways, and gully plantings. Draws in cultivated fields that are used for terrace outlets should be seeded to a permanent grass, otherwise, serious gullying will result if cultivation is continued.

This seed is available for each of the above purposes, however, the Soil Erosion Service desired to keep this seed in the warehouse, as well as alfalfa seed, until conditions are favorable for seeding.

GRASS DEMONSTRATIONS

One of the recommendations for soil erosion control is to plant grass. There are no tame grasses which are known to be very well adapted to conditions prevailing in this locality.

Therefore, in cooperation with the Bureau of Plant Industry, demonstration plots are being established in several places in the Area. These will include native as well as tame grasses in plots varying from one-fourth to one acre in size. The grasses will be:

Two mixtures of varying amounts of Little Bluestem, Blue Grama, Switch Grass and Western Wheatgrass; two plots of Blue Grama Grass, Big Bluestem; Sand Dropseed; a mixture of Brome and Crested Wheatgrass; and a plot with a mixture of Brome and Western Wheatgrass.

The Cooperators on whose farms the demonstrations will be placed are Will McDill, W. W. Isaac, Dr. J. C. Bowman, and Ira L. White.

It is hoped that valuable information may be obtained in these tests in regard to the advisability of reseeding native grasses as compared to tame grass mixtures in this part of the state.

PASTURE RHYMES

In the spring when your cows
Have emptied the mows,
and you're wondering what you
will feed,
Don't get in a hurry
Your pasture to worry
No matter how urgent the need.

For close grazing then
Means poor pasture when
The weather begins to get warm;
And this pasture grass
Is head of the class -
The cheapest feed on the farm.

It's proven by test,
Nature's way is the best
Let the grass get a start before
grazing.

its tempting of course
To sheep, cow, or horse,
But the difference is truly amazing.

Who'd milk a calf
Or harness a colt,
Or butcher a suckling pig?
Then stay off your grass
And give it a chance --
Let it grow up and get big.

A good grassy sod,
Rod after rod
Is the best of erosion prevention;
But the land that's kept bare
Year after year
Requires a lot of attention.

-- I. K. Landon, Chief Agronomist,
Wisconsin Area.

SUMMER FALLOW MEANS CLEAN TILLAGE

Summer fallow is of more than usual importance in 1935, due to the lack of subsoil moisture and the extremely low rainfall to date.

In 1934 many farmers had good summer fallow intentions, but weeds made a vigorous early growth that soon exhausted the surface moisture, leaving the ground too dry and hard to plow. Russian thistles are well on their way to repeat the 1934 procedure unless the fields that the Soil Erosion Service Cooperators expect to fallow are plowed, listed or cultivated very soon.

The few men in the Limestone Area, who started their fallow operations early in 1934 and prevented all vegetative growth throughout the summer, were successful in storing a good supply of soil moisture. They either secured a satisfactory stand of alfalfa last fall or have sufficient subsoil moisture this spring

to seed, should they have enough rain to soak the top soil.

A duckfoot cultivator is one of the most satisfactory implements for summer fallow cultivation. The Soil Erosion Service purchased twelve sets of duckfoot shovels in 1934 for the use of their Cooperators. These shovels can be used on any double row cultivator. The following men have charge of these shovels:

G. M. Shook	Roy Phillips
Emit Sink	A. E. Cook
John Matousek	C. M. Kiser
Meyer Miles	Dr. J. C. Bowman
Emit Henningson	John Wilson
A. T. Boyer	Evart White

Every Soil Erosion Service Cooperator is urged to use these shovels and return them promptly so that they will be available to other Cooperators.

The importance of clean cultivation in summer fallowing cannot be overestimated. One Russian thistle to every 100 square feet will defeat the purpose of summer fallow in years of normal or less than normal rainfall -- be fair to yourself, do a good job.

PRECIPITATION, APRIL 1935

Average for entire Area -----	.77 Inches
Normal -----	2.44 "
Below Normal -----	1.67 "

PRECIPITATION FROM JANUARY TO APRIL INCLUSIVE

<u>MONTH</u>	<u>PRECIPITATION</u> 1935	<u>NORMAL</u>	<u>BELOW NORMAL</u>
January	.0	.48	.48
February	.64	.96	.32
March	.36	1.17	.81
April	.77	2.44	1.67
TOTAL	1.77	5.05	3.28

WIND EROSION ON THE LIMESTONE CREEK PROJECT

This project was started as a water erosion and water conservation project. For the past several months wind erosion has held the spotlight here as well as in western Kansas.

We have made a few actual measurements on the amount of top-soil lost from some fields and the amount deposited on others. Our results show the following:

During the first month of dust storms one wheat field of 37 acres lost 40 tons of soil per acre. An old corn field with the lister ridges levelled by cultivation lost 79.7 tons of top soil per acre from a 9-acre field. These figures show a tremendous amount of soil moved by the wind. During the same period measurements on several fields with good cover crops were measured for the amount of soil deposited. One field of about 20 acres which had an excellent stand of Russian thistles about ten inches in height showed a gain of 74 tons of soil per acre. Three individual samples were taken from this field showing 69.9 tons, 70.1 and 84.4 tons of soil deposited per acre. All the freshly deposited loessial material was carefully collected from 4' by 4' squares in the field and the results figured in tons per acre.

A forested area showed a deposit of 16.9 and 12.1 tons of soil per acre over the same period. A bluestem pasture had 4.8 and 6.0 tons deposited and a sunflower field had 7.2 tons per acre off of two measurements from different parts of the field.

Observation shows that a fair amount of plant growth or crop residue practically eliminates the wind erosion problem and that listing furrows at right angles to the wind checks a good deal of the soil blowing.

EXTRA

THE NEWS

EXTRA

EROSION CONTROL
LEADS FIELD!



EROSION CONTROL COMES TO FRONT
SUCCESS MADE POSSIBLE EVERY EFFORT BEING
BY FARMERS COOPERATION

ENGINEERING

PROGRESS IN CONSTRUCTION

Terrace construction to the first of May 1935 in the Limestone Creek Area has progressed nicely. Up to that time 1,064 miles of terraces had been built. In doing this, 19,780 acres have been terraced.

Our terracing activities in May will be confined to the area north of Highway No. 36 in the northeast part of the Area. Every effort is being made to push the terracing work in this part of the Area to completion. There are at this time approximately 100 miles of terrace to build in this Area, weather conditions permitting we will have this work completed by the 20th of May.

In addition to the terrace construction, 19.4 miles of interception ditch and 92 miles of outlet channel have been built in the Area to date.

SOD MACHINERY

Many Cooperators have expressed the desire to have their pastures contoured so as to reduce the run-off from their pasture lands, which has been brought about by over-grazing. Pasture contours will aid materially in increasing the water holding capacity of our pastures.

This desire has created a demand for some new type machinery in the nature of sod cutting and handling equipment.

The Soil Erosion Service of the Limestone Area has developed a pasture contour machine that has received considerable approval from those who have seen it perform. It cuts a 12-inch strip of sod, 4 to 5 inches deep, raises it from the furrow, moves it to the lower side and leaves it in an even strip with the grass

side up. The sod strip as placed is approximately three inches below the down hill edge of the furrow and is carried to this position by curved rods attached to the cutter.

Ira White's pasture three quarters of a mile south of Mt. Hope Cemetery has been contoured with this machine.

Another machine being developed is one that completely removes the 12-inch strip of sod from the field and elevates it into a truck by means of a conveyor belt. The sod is then transported to outlet channels where it is reset in strips 10 feet apart. This machine will also speed up the work of re-sodding fields that are to be returned to pasture where Buffalo sod is to be used.

PONDS

Up to May 1 thirty water supply ponds have been built in the Limestone Watershed by the Soil Erosion Service and cooperating farmers. These ponds range in capacity from one and one-half to thirty-one acre feet. The average capacity is in excess of seven acre feet.

These ponds have all been constructed to meet specifications approved by the Water Resources Division of the State Board of Agriculture and landowners may receive the tax reduction provided by Kansas law on farms having large ponds.

In addition to the large ponds, seven smaller ponds have been built as gully control measures which will provide water basins of small capacity until they are filled with silt.

Four ponds were completed in April. One of these, on the farm of Charles Havice, is the largest pond constructed under supervision of the Soil Erosion Service. The Havice pond has a capacity of 31.3 acre feet, a normal surface area of 6.48 acres and a depth, exclusive of

borrow pit, of 12 feet. The main dam is 185 feet long and required 2,750 cubic yards of earth. The pond has a drainage area of 850 acres of which 80 percent is sod.

The plan for pond construction by the Soil Erosion Service has been for the Cooperator to furnish the power and the Government to furnish labor, engineering plans, and supervision.

A number of Cooperators hired their township tractors at a low hourly rate to construct their ponds. The cost, to them, was about five cents per cubic yard of earth in the dam.

If any part of the drainage into a pond is cultivated land, some form of silt catcher should be provided. This may be a smaller earth dam upstream near the normal water line or one constructed of fine brush and hog wire.

A large number of old ponds in the Area have failed, due to little or no provision being made for overflow. An adequate spillway with proper silting structures is cheap pond insurance.

VISITORS TOUR AREA

The State Board of Agriculture held one of its regular meetings at Beloit and spent one afternoon with us on a planned tour of the Area. The Chamber of Commerce of Mankato and the staff of the Soil Erosion Service gave them a banquet in the evening.

The Rural Press class and a class in Agricultural Engineering, both from Kansas State College, were tour visitors.

Farm Bureau Members and others who were interested were here from Mitchell County and Clay County.

Two bus loads from Marshall County and a carload from Dickinson County were here April 27.

All of these groups were very well pleased with the type and quality of work being done, and expressed themselves as anxious to have this work done in their counties.

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